

In the Claims:

Substitute sheets for the claims, presented below, are included in Appendix B. Please amend the claims as follows:

✓
Cancel claims 1-~~7~~⁵ and substitute therefore the following: ✓

A1 ~~6~~⁶. (New) A device for determining changes of the density of a medium comprising:
a transmitting device for the emission of a send signal, said send signal having a constant frequency and amplitude and a minimum of one period, with the transmitting device being coupled to the medium for reflecting the send signal from the medium as a response signal, said response signal being the signal reflected when the send signal encounters the medium;
at least one receiver unit for receiving the response signal from the medium;
an A/D converter and a sampling unit coupled to each of the receiver units, said A/D converter and sampling unit converting the response signal into an A/D converter output, wherein the transmitting device and the A/D converter output are linked to a numerical processing unit for detecting and outputting the phase shift between the send signal and the response signal.

~~7~~⁷. (New) The device of claim ~~6~~⁶, wherein output from the numerical processing unit is coupled to a reporting device.

~~8~~⁸. (New) The device of claim ~~7~~⁷, wherein the reporting device is a computer display unit.

~~9~~⁹. (New) The device of claim ~~7~~⁷, wherein the reporting device is a memory unit that stores the output from the numerical processing unit.

~~10~~¹⁰. (New) The device of claim ~~8~~⁶, wherein the send signal has a sine shape.

~~11~~¹¹. (New) The device of claim ~~12~~¹⁰, wherein the send signal is an acoustic signal.

A1
conc.

¹²
14. (New) The device of claim ⁶8, wherein the transmitting device is configured to transmit two send signals.

¹³
15. (New) The device of claim ¹²14, wherein the transmitting device is configured to transmit two send signals simultaneously.

¹⁴
16. (New) The device of claim ¹²14, wherein each of the two send signals has a constant frequency and amplitude.

¹⁵
17. (New) The device of claim ¹⁴16, wherein the transmitting device and receiver unit are coupled to identical channels in which the signals are conditioned and filtered.

¹⁶
18. (New) The device of claim ¹²14, wherein each of the two send signals has a different frequency from the other, with a signal propagation time of the two send signals differing by a maximum of one period.

¹⁷
19. (New) The device of claim ⁶8, wherein the transmitting device and receiver unit are formed as a single convertible sensor.

¹⁸
20. (New) The device of claim ¹⁷19, wherein the length of the send signal is at most equal to twice the distance between the sensor and a reflection point on the medium, the reflection point being the point where the send signal reflects off of the medium. --

In the Abstract:

A marked up version of the Abstract, showing insertions and deletions, is included in Appendix C. Please replace the abstract with the following text:

-- The invention refers to a device for the detection of changes in the density of a solid, liquid or gaseous medium. The device is capable of detecting the effects of physical and/or chemical parameters, causing changes in the density and/or compression constants of the medium. The device comprises a transmitter unit for transmitting a send signal, having a